

Notice of Allowability

Application No.

10/691,166

Examiner

Quang N. Nguyen

Applicant(s)

KOCH ET AL.

Art Unit

2141

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Amendment filed on 08/07/2007.
2. ☒ The allowed claim(s) is/are 1-37, 39-56, 59, 61, 63 and 65.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date see attachment.
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Quang N. Nguyen
Patent Examiner - AU 2141

Interview Summary

1. A proposed amendment was submitted for applicant's consideration. Examiner suggested the Applicant to amend claims as shown in the Examiner's Amendment below in order to place the application in condition for allowance.

Examiner's Amendment

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

3. Authorization for this Examiner's Amendment was given in a telephone interview with the Applicant's Representative, Mr. Steven J. Shumaker (Reg. No. 36,275), on October 15th, 2006.

4. Please amend claims 1, 20, 21, 28, 29, 36, 37, 43 and cancel claims 38, 57, 58, 60, 62 and 64 as below:

Claim 1. (Currently Amended) A method performed by a network node coupled to a passive optical network interface and to one or more network clients, the method comprising:

detecting a disablement of the passive optical network interface;

storing in a memory address association information indicating association of network addresses with the one or more network clients upon detecting the disablement, wherein the memory comprises a memory associated with the network node coupled to the one or more network clients;

retrieving from the memory the stored address association information upon recovery of the passive network interface from the disablement; and

reestablishing the association of the network addresses and the one or more network clients based on the retrieved address association information,

wherein the disablement comprises a network disablement in which the passive optical network interface loses state information indicating association of the network addresses with the one or more network clients.

Claim 20. (Currently Amended) A computer-readable storage medium comprising instructions to cause a processor, in a network node coupled to a passive optical network interface and to one or more network clients, to:

detect a disablement of the passive optical network interface;

store in a memory address association information indicating association of network addresses with the one or more network clients upon detecting the

Art Unit: 2141

disablement, wherein the memory comprises a memory associated with the network node coupled to the one or more network clients;

retrieve from the memory the stored address association information upon recovery of the passive network interface from the disablement; and

reestablish the association of the network addresses and the one or more network clients based on the retrieved address association information,

wherein the disablement comprises a network disablement in which the passive optical network interface loses state information indicating association of the network addresses with the one or more network clients.

Claim 21. (Currently Amended) A method performed by a network node coupled to a passive optical network interface and to one or more network clients, the method comprising:

detecting a disablement of the passive optical network interface;

retrieving, from a memory associated with the network node coupled to the one or more network clients, stored address association information indicating association of network addresses with the one or more network clients upon recovery of the passive network interface from [[a]] the disablement;

reestablishing the association of the network addresses with the one or more network clients based on the retrieved address association information;

Art Unit: 2141

sending ARP Address Resolution Protocol (ARP) queries to the one or more network clients for the network addresses indicated in the address association information; and

maintaining the reestablished associations upon receiving ARP responses from the one or more network clients for the network addresses,

wherein the disablement comprises a network disablement in which the passive optical network interface loses state information indicating association of the network addresses with the one or more network clients.

Claim 28. (Currently amended) A computer-readable storage medium comprising instructions to cause a processor, in a network node coupled to a passive optical network interface and to one or more network clients, to:

detect a disablement of the passive optical network interface;

retrieve, from a memory associated with the network node coupled to the one or more network clients, stored address association information indicating association of network addresses with the one or more network clients upon recovery of the passive network interface from the disablement;

reestablish the association of the network addresses with the one or more network clients based on the retrieved address association information;

send ARP Address Resolution Protocol (ARP) queries to the one or more network clients for the network addresses indicated in the address association information; and

maintain the reestablished associations upon receiving ARP responses from the one or more network clients for the network addresses,

wherein the disablement comprises a network disablement in which the passive optical network interface loses state information indicating association of the network addresses with the one or more network clients.

Claim 29. (Currently amended) A method performed by a network node coupled to a passive optical network interface and to one or more network clients, the method comprising:

detecting a disablement of the passive optical network interface;

retrieving, from a memory associated with the network node coupled to the one or more network clients, stored address association information indicating association of network addresses with the one or more network clients upon recovery of the passive network interface from ~~[[a]]~~ the disablement;

determining a length of time of the disablement;

updating remaining lease times indicated by the address association information in accordance with the determined length of time of the ~~network~~ disablement; and

reestablishing the association of the network addresses with the one or more network clients in accordance with the updated address association information,

wherein the disablement comprises a network disablement in which the passive optical network interface loses state information indicating association of the network addresses with the one or more network clients.

Claim 36. (Currently amended) A computer-readable storage medium comprising instructions to cause a processor, in a network node coupled to a passive optical network interface and to one or more network clients, to:

detect a disablement of the passive optical network interface;

retrieve, from a memory **associated with the network node coupled to the one or more network clients,** stored address association information indicating association of network addresses with the **one or more** network clients upon recovery of the passive network interface from **[[a]] the** disablement;

determine a length of time of the disablement;

update remaining lease times indicated by the address association information in accordance with the determined length of time of the disablement; and

reestablish the association of the network addresses with the **one or more** network clients in accordance with the updated address association information,

wherein the disablement comprises a network disablement in which the passive optical network interface loses state information indicating association of the network addresses with the one or more network clients.

Claim 37. (Currently amended) A passive optical network comprising:

a network node that represents one or more network clients;

a passive optical network interface that transmits information to the network node via an optical fiber link, wherein the network node is coupled to the passive optical network interface and to the one or more network clients; and

Art Unit: 2141

a non-volatile memory that stores a set of address association information associated with the network node that associates network addresses with the one or more network clients represented by the network node upon recovery of the passive optical network interface from a disablement,

wherein the network node is configured to detect the disablement of the passive optical network interface, store the set of address association information in the non-volatile memory upon detecting the disablement, retrieve the stored address association information from the non-volatile memory upon recovery of the passive optical network interface from the disablement, and reestablish the association of the network addresses and the one or more network clients based on the retrieved address association information, and

wherein the disablement comprises a network disablement in which the passive optical network interface loses state information indicating association of the network addresses with the one or more network clients.

Claim 38. (Canceled)

Claim 43. (Currently amended) A passive optical network device comprising a computer-readable storage medium and a computer processor, the computer processor comprising:

Art Unit: 2141

means for detecting a disablement of the passive optical network interface, wherein the passive optical network interface is coupled to a network node and the network node is coupled to one or more network clients;

means for storing, in a memory associated with the network node coupled to the one or more network clients, address association information indicating association of network addresses with the one or more network clients upon detecting the disablement;

means for retrieving from the memory the stored address association information upon recovery of the passive network interface from the disablement; and

means for reestablishing the association of the network addresses and the one or more network clients based on the retrieved address association information upon recovery of the passive network interface from the disablement,

wherein the disablement comprises a network disablement in which the passive optical network interface loses state information indicating association of the network addresses with the one or more network clients.

Claim 57. (Canceled)

Claim 58. (Canceled)

Claim 60. (Canceled)

Claim 62. (Canceled)

Claim 64. (Canceled)

5. Pursuant to MPEP 606.01, the title has been changed to read:

-- METHODS, DEVICES AND COMPUTER-READABLE STORAGE MEDIA FOR
PASSIVE OPTICAL NETWORK ADDRESS ASSOCIATION RECOVERY --

6. Claims 1-37, 39-56, 59, 61, 63 and 65 are allowed.

7. The following is an examiner's statement of reasons for allowance:

In interpreting the currently amended claims, in light of the specification and the applicant's arguments filed on 08/07/2007, the Examiner finds the claimed invention to be patentably distinct from the prior art of records. Specially, the prior art of records, individually or in combination, fail to explicitly teach or render obvious the claimed invention as recited in independent claims 1, 20, 21, 28, 29, 36, 37 and 43.

The features as recited in independent claims 1, 20, 21, 28, 29, 36, 37 and 43 *"detecting a disablement of the passive optical network interface; retrieving, from a memory associated with the network node coupled to the one or more network clients, stored address association information indicating association of network addresses with the one or more network clients upon recovery of the passive network interface from the disablement; reestablishing the association of the network addresses and the one or more network clients based on the retrieved address association information, wherein the disablement comprises a network disablement in which the passive optical network interface loses state information indicating association of the network addresses with the one or more network clients"*, when taken in the context of the claims as a whole, was not uncovered in the prior art of records.

Nor were the prior art of records uncovered that would have provided a basis of evidence for asserting a motivation that one of ordinary skill in the art at the time the invention was made, knowing of a method, device and computer-readable storage medium for reestablishing the association of network address information with network clients in a passive optical network (PON), would have integrated or modified to teach the method, device and computer-readable storage medium comprising *"detecting a disablement of the passive optical network interface; retrieving, from a memory associated with the network node coupled to the one or more network clients, stored address association information indicating association of network addresses with the one or more network clients upon recovery of the passive network interface from the*

disablement; reestablishing the association of the network addresses and the one or more network clients based on the retrieved address association information, wherein the disablement comprises a network disablement in which the passive optical network interface loses state information indicating association of the network addresses with the one or more network clients", including other specific features as recited in the context of independent claims 1, 20, 21, 28, 29, 36, 37 and 43.

Dependent claims 2-19, 22-27, 30-35, 38-42, 44-56, 59, 61, 63 and 65 further limit the allowed independent claims 1, 20, 21, 28, 29, 36, 37 and 43; therefore, they are also allowed.

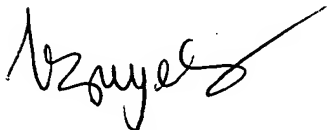
8. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should clearly labeled "Comments on Examiner's Amendment".

Art Unit: 2141

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang N. Nguyen whose telephone number is (571) 272-3886.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's SPE, Rupal Dharia, can be reached at (571) 272-3880. The fax phone number for the organization is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Quang N. Nguyen
Patent Examiner – AU 2141
October 15th, 2007